

March 16, 1953

Mr. Charles M. Hess
60-65 Catalpa Avenue
Brooklyn 27, N. Y.

Dear Mr. Hess:

I have your letter of March 11, concerning prerequisites for graduate study in Bacteriology. Your letter omitted many details that would help to evaluate your problem. For example, ~~which~~ college are you attending--perhaps you could secure local advice which would be much more helpful to you. Also, what significance should be attributed to your applying to me for this information, rather than a formal enquiry to the Chairman of our Bacteriology Department, or the Dean of the Graduate School? If you will provide these details, I will be in a much better position to give you the best answer to your questions, or to refer you to someone who can.

There are some general points that can be made in general terms. The most important objective of your college life should be a balanced education: the learning of habits and techniques of clear thinking, writing and expression, as well as the technology of your chosen field. General requirements for a degree in the Biological Division of our graduate school generally include chemistry through qualitative analysis and organic; a year of college physics; mathematics preferably through at least one semester of the calculus, and the equivalent of a usual college major in some area of Biology (but including as a rule at least a year each in Botany and Zoology, regardless of the specialization). The detailed organization of your graduate studies themselves will depend so much on the measure of your previous training, and on your area of specialization in Bacteriology, that I would not want to quote any generalities. If you have a concrete program, I will be pleased to suggest its possible deficiencies.

You are quite right that a strong background in chemistry is essential in most aspects of bacteriology, including my own area of bacterial genetics. How much emphasis you should give to chemistry in your undergraduate program must be weighed against other legitimate demands on your time. Different professors may be inclined to give different answers. My own inclination would be to recommend that a student concentrate on background subjects (mathematics, physics, chemistry, general biology-- not excluding genetics--) and his cultural foundations for his undergraduate curriculum, and save his specialization for his graduate work. Above all, I suggest that there has been far too much emphasis on students' meeting formal prerequisites, and not enough on their further self-education through extensive reading beyond the needs of the classroom.

Yours sincerely,

Joshua Lederberg
Associate Professor of Genetics